

## PATENT COOPERATION TREATY

10/048196

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

Date of mailing (day/month/year) 21 February 2002 (21.02.02)
Applicant's or agent's file reference FB/BM45402
International application No. PCT/EP00/07291

From the INTERNATIONAL BUREAU

To:

RECEIVED

PRIVETT, Kathryn, Louise  
 SmithKline Beecham  
 Corporate Intellectual Property  
 (CN9.25.1)  
 980 Great West Road  
 Brentford, Middlesex TW8 9GS  
 ROYAUME-UNI

JUN 03 2002

TECH CENTER 1600/2900

## IMPORTANT NOTIFICATION

International filing date (day/month/year)  
27 July 2000 (27.07.00)

## 1. The following indications appeared on record concerning:

the applicant     the inventor     the agent     the common representative

Name and Address  PRIVETT, Kathryn, Louise SmithKline Beecham Two New Horizons Court Brentford Middlesex TW8 9EP United Kingdom	State of Nationality	State of Residence
	Telephone No. +44 181 975 2585	
	Facsimile No. +44 181 975 6294	
	Teleprinter No.	

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

the person     the name     the address     the nationality     the residence

Name and Address  PRIVETT, Kathryn, Louise SmithKline Beecham Corporate Intellectual Property (CN9.25.1) 980 Great West Road Brentford, Middlesex TW8 9GS United Kingdom	State of Nationality	State of Residence
	Telephone No. +44 20 8047 5000	
	Facsimile No. +44 20 8047 6894	
	Teleprinter No.	

## 3. Further observations, if necessary:

4. A copy of this notification has been sent to:
<input checked="" type="checkbox"/> the receiving Office <input type="checkbox"/> the designated Offices concerned <input type="checkbox"/> the International Searching Authority <input checked="" type="checkbox"/> the elected Offices concerned <input type="checkbox"/> the International Preliminary Examining Authority <input type="checkbox"/> other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	Authorized officer  Dominique DELMAS  Telephone No.: (41-22) 338.83.38
---	--

## PATENT COOPERATION TREATY

PCT

**NOTIFICATION OF ELECTION**  
 (PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
**ETATS-UNIS D'AMERIQUE**

in its capacity as elected Office

Date of mailing (day/month/year) 23 March 2001 (23.03.01)	To:  Commissioner US Department of Commerce United States Patent and Trademark Office, PCT 2011 South Clark Place Room CP2/5C24 Arlington, VA 22202 <b>ETATS-UNIS D'AMERIQUE</b> in its capacity as elected Office
International application No. PCT/EP00/07291	Applicant's or agent's file reference FB/BM45402
International filing date (day/month/year) 27 July 2000 (27.07.00)	Priority date (day/month/year) 30 July 1999 (30.07.99)
<b>Applicant</b> THONNARD, Joelle	

1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

03 February 2001 (03.02.01)

in a notice effecting later election filed with the International Bureau on:

\_\_\_\_\_

2. The election  was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	Authorized officer  Juan Cruz  Telephone No.: (41-22) 338.83.38
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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
8 February 2001 (08.02.2001)

PCT

(10) International Publication Number  
**WO 01/09331 A2**

(51) International Patent Classification<sup>7</sup>: **C12N 15/31**, (74) Agent: **PRIVETT, Kathryn, Louise; SmithKline Beecham, Two New Horizons Court, Brentford, Middlesex TW8 9EP (GB).**  
C07K 14/21, A61K 39/02, C07K 16/12, G01N 33/53,  
A61K 31/70, 39/40

(21) International Application Number: **PCT/EP00/07291**

(22) International Filing Date: **27 July 2000 (27.07.2000)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:  
**9918041.6 30 July 1999 (30.07.1999) GB**

(71) Applicant (*for all designated States except US*):  
**SMITHKLINE BEECHAM BIOLOGICALS S.A.**  
[BE/BE]; Rue de l'Institut 89, B-1330 Rixensart (BE).

(72) Inventor; and

(75) Inventor/Applicant (*for US only*): **THONNARD, Joelle**  
[BE/BE]; SmithKline Beecham Biologicals s.a., Rue de L'Institut 89, B-1330 Rixensart (BE).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— *Without international search report and to be republished upon receipt of that report.*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

WO 01/09331 A2

(54) Title: NOVEL COMPOUNDS

(57) Abstract: The invention provides BASB125 polypeptides and polynucleotides encoding BASB125 polypeptides and methods for producing such polypeptides by recombinant techniques. Also provided are diagnostic, prophylactic and therapeutic uses.

## SEQUENCE LISTING

<110> SmithKline Beecham Biologicals SA

<120> Novel Compounds

<130> BM45402

<160> 4

<170> FastSEQ for Windows Version 3.0

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<212> DNA

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gcccgcatga	aattgtcttc	agaatccaaa	gccaagattt	cagaaacggc	atgcggctgt	240
gtggctgata	aagcacctga	agccgtcagc	ttgaccgagc	ttaccacagc	tgccattaat	300
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Ala	Asn	Leu	Thr	Thr	Ser	Leu	Ile	Lys	His	Ala	Val	Lys	Gln	Thr	Cys
35															
40															
45															
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85                    90                    95  
Ala Ala Ile Asn Pro Asn Ala Arg Thr Glu Val Ala Gln Lys Ile Val  
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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 00/07291

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/31 C07K14/21 A61K39/02 C07K16/12 G01N33/53  
 A61K31/70 A61K39/40

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K A61K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL 'Online! Entry/Acc.no. AI677046, 25 May 1999 (1999-05-25) WALBOT, V. ET AL.: "605048F11.x1 605 – Endosperm cDNA library from Schmidt lab Zea mays cDNA, mRNA sequence." XP002157337 the whole document ----	8-10, 14, 15
A	WO 97 32980 A (LOOSMORE SHEENA M ; SCHRYVERS ANTHONY B (CA); CONNAUGHT LAB (CA); Y) 12 September 1997 (1997-09-12) the whole document -----	

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

## \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

Date of the actual completion of the international search

15 January 2001

Date of mailing of the international search report

26/01/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.  
 Fax (+31-70) 340-3016

Authorized officer

Smalt, R

## INTERNATIONAL SEARCH REPORT

Information on patent family members

Internal Application No

PCT/EP 00/07291

Patent document cited in search report	Publication date	Patent family member(s)			Publication date
WO 9732980	A	12-09-1997	US	6090576 A	18-07-2000
			AU	722681 B	10-08-2000
			AU	1865397 A	22-09-1997
			BR	9710435 A	17-08-1999
			CA	2248095 A	12-09-1997
			CN	1217748 A	26-05-1999
			EP	0885300 A	23-12-1998
			JP	2000503855 T	04-04-2000
			NZ	331777 A	29-09-1999

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

GIDDINGS, Peter John  
SMITHKLINE BEECHAM  
Corporate Intellectual Property  
Two New Horizons Court  
Brentford  
Middlesex TW8 9EP  
GRANDE BRETAGNE

FILED  
12 NOV 2001  
NEW HORIZONS COURT

PCT

## NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing  
(day/month/year) 08.11.2001

Applicant's or agent's file reference <b>FB/FR/BM45402</b> ML	<b>IMPORTANT NOTIFICATION</b>	
International application No. <b>PCT/EP00/07291</b>	International filing date (day/month/year) <b>27/07/2000</b>	Priority date (day/month/year) <b>30/07/1999</b>
Applicant <b>SMITHKLINE BEECHAM BIOLOGICALS S.A. et al.</b>		

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Büchler, S  Tel. +49 89 2399-8090	
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## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FB/FR/BM45402	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP00/07291	International filing date (day/month/year) 27/07/2000	Priority date (day/month/year) 30/07/1999
International Patent Classification (IPC) or national classification and IPC C12N15/31		
Applicant SMITHKLINE BEECHAM BIOLOGICALS S.A. et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 2 sheets.</p> <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I   <input checked="" type="checkbox"/> Basis of the report</li> <li>II   <input type="checkbox"/> Priority</li> <li>III   <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV   <input type="checkbox"/> Lack of unity of invention</li> <li>V   <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI   <input type="checkbox"/> Certain documents cited</li> <li>VII   <input type="checkbox"/> Certain defects in the international application</li> <li>VIII   <input checked="" type="checkbox"/> Certain observations on the international application</li> </ul>		

Date of submission of the demand 03/02/2001	Date of completion of this report 08.11.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Grosskopf, R  Telephone No. +49 89 2399 8714



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP00/07291

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):  
**Description, pages:**

1-64                   as originally filed

**Claims, No.:**

18-26                   as originally filed

1-17                   as received on                   12/07/2001   with letter of                   11/07/2001

**Drawings, sheets:**

1/2,2/2                   as originally filed

**Sequence listing part of the description, pages:**

1,2, as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP00/07291

listing has been furnished.

4. The amendments have resulted in the cancellation of:

the description,      pages:  
 the claims,               Nos.:  
 the drawings,          sheets:

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes:	Claims	1-26
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-26
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-26
	No:	Claims	

2. Citations and explanations  
see separate sheet

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
see separate sheet

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP00/07291

**Ad item V and VIII:**

The Applicant has isolated a nucleotide sequence from *Moraxella catarrhalis* which was arbitrarily designated "BASB125".

Although a function has not been determined, the corresponding protein seems to be immunogenic and anti-BASB125 antibodies seem to be present in human convalescent patients.

As far as the complete length proteins and polynucleotides are concerned, novelty and non-obviousness has to be acknowledged.

As far as claims are concerned which comprise a certain broadening with respect to the protein, said broadening appears to be justified since the resulting proteins have to have the essential property of the original protein, namely the same immunogenic activity (although it is not completely clear what is meant by "substantially the same immunogenic activity", even when read in the light of the description).

On the other hand, this does not apply for the broadened DNA sequences. In fact, it is well known that a deviation of only 15% in the DNA sequence (without indicating where this deviation shall take place) may result in totally unrelated proteins. This deficiency can neither be cured by a reference to the function (or even merely "substantially the same biological function") since, as mentioned above, this function is unknown.

Finally, with regard to claims which relate to medical uses of the protein, it appears to be questionable whether the experimental results shown in the present application may be considered as being sufficient in order to demonstrate or promise a successful application of said protein e.g. as a vaccine.

**CLAIMS:**

1. An isolated polypeptide comprising an amino acid sequence which has at least 85% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID

5 NO:2.

10 2. An isolated polypeptide as claimed in claim 1 in which the amino acid sequence has at least 95% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2.

15 3. The polypeptide as claimed in claim 1 comprising the amino acid sequence of SEQ ID NO:2.

4. An isolated polypeptide of SEQ ID NO:2.

15 5. An immunogenic fragment of the polypeptide as claimed in any one of claims 1 to 4 in which the immunogenic activity of said immunogenic fragment is substantially the same as the polypeptide of SEQ ID NO:2.

20 6. A polypeptide as claimed in any of claims 1 to 5 wherein said polypeptide is part of a larger fusion protein.

7. An isolated polynucleotide encoding a polypeptide as claimed in any of claims 1 to 6.

25 8. An isolated polynucleotide comprising a nucleotide sequence encoding a polypeptide that has at least 85% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2; or a nucleotide sequence complementary to said isolated polynucleotide over the entire coding region.

9. An isolated polynucleotide comprising a nucleotide sequence that has at least 85% identity to a nucleotide sequence encoding a polypeptide of SEQ ID NO:2 over the entire coding region; or a nucleotide sequence complementary to said isolated polynucleotide over the entire coding region.

10. An isolated polynucleotide which comprises a nucleotide sequence which has at least 85% identity to that of SEQ ID NO:1 over the entire length of SEQ ID NO:1 and which encodes for a polypeptide that has substantially the same biological function or activity as the mature polypeptide encoded by a nucleotide sequence of SEQ ID NO:1; or a nucleotide sequence complementary to said isolated polypeptide over the entire length of SEQ ID NO:1.
11. The isolated polynucleotide as claimed in any one of claims 7 to 10 in which the identity is at least 95% to SEQ ID NO:1.
12. An isolated polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO:2.
13. An isolated polynucleotide comprising the polynucleotide of SEQ ID NO:1.
14. An isolated polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO:2, obtainable by screening an appropriate library under stringent hybridization conditions with a labeled probe having the sequence of SEQ ID NO:1 or a fragment thereof.
15. An expression vector or a recombinant live microorganism comprising an isolated polynucleotide according to any one of claims 7 - 14.
16. A host cell comprising the expression vector of claim 15 or a subcellular fraction or a membrane of said host cell expressing an isolated polypeptide comprising an amino acid sequence that has at least 85% identity to the amino acid sequence of SEQ ID NO:2.
17. A process for producing a polypeptide of claims 1 to 6 comprising culturing a host cell of claim 16 under conditions sufficient for the production of said polypeptide and recovering the polypeptide from the culture medium.

## PATENT COOPERATION TREATY

PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>FB/BM45402</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/EP 00/07291</b>	International filing date (day/month/year) <b>27/07/2000</b>	(Earliest) Priority Date (day/month/year) <b>30/07/1999</b>
Applicant <b>SMITHKLINE BEECHAM BIOLOGICALS S.A.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.  
 It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report
  - a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
    - the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
  - b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing :
    - contained in the international application in written form.
    - filed together with the international application in computer readable form.
    - furnished subsequently to this Authority in written form.
    - furnished subsequently to this Authority in computer readable form.
    - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
    - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished
2.  Certain claims were found unsearchable (See Box I).
3.  Unity of invention is lacking (see Box II).
4. With regard to the title,
  - the text is approved as submitted by the applicant.
  - the text has been established by this Authority to read as follows:  
**MORAXELLA CATARRHALIS ANTIGEN BASB125**
5. With regard to the abstract,
  - the text is approved as submitted by the applicant.
  - the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the drawings to be published with the abstract is Figure No.
  - as suggested by the applicant.
  - because the applicant failed to suggest a figure.
  - because this figure better characterizes the invention.

None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT [REDACTED] 00/07291

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 C12N15/31 C07K14/21 A61K39/02 C07K16/12 G01N33/53  
 A61K31/70 A61K39/40

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
 IPC 7 C12N C07K A61K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL 'Online! Entry/Acc.no. AI677046, 25 May 1999 (1999-05-25) WALBOT, V. ET AL.: "605048F11.x1 605 - Endosperm cDNA library from Schmidt lab Zea mays cDNA, mRNA sequence." XP002157337 the whole document ----	8-10, 14, 15
A	WO 97 32980 A (LOOSMORE SHEENA M ;SCHRYVERS ANTHONY B (CA); CONNAUGHT LAB (CA); Y) 12 September 1997 (1997-09-12) the whole document -----	

Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## ° Special categories of cited documents :

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15 January 2001

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Name and mailing address of the ISA  
 European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Smalt, R

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

PCT/ [REDACTED] 00/07291

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
WO 9732980	A	12-09-1997	US 6090576 A	18-07-2000
			AU 722681 B	10-08-2000
			AU 1865397 A	22-09-1997
			BR 9710435 A	17-08-1999
			CA 2248095 A	12-09-1997
			CN 1217748 A	26-05-1999
			EP 0885300 A	23-12-1998
			JP 2000503855 T	04-04-2000
			NZ 331777 A	29-09-1999